



Windows CE Overview

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Microsoft's Vision

"To provide people with the power to do what they want to do, where and when they want to do it, on any device connected to the Internet."

Beyond your desktop
Out in the real world

More than individuals
Families, communities,
entire organizations

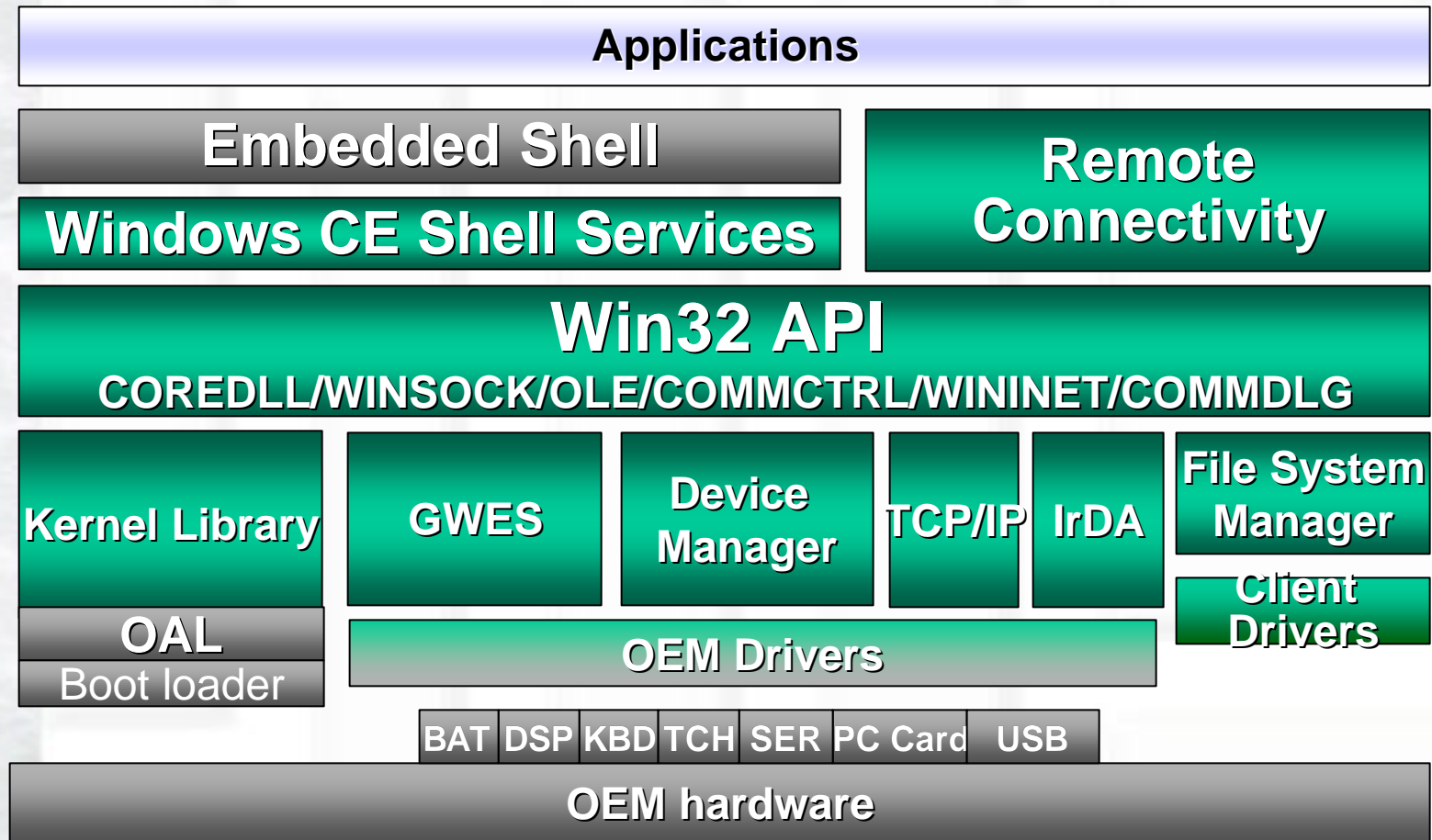
More than one device
Connected
interoperating
devices



Our Objective

- Create an operating system suitable for building great intelligent appliances
 - Appliance: focused function, smaller systems
 - Not general purpose, but not simple either
 - Broad range of hardware, but resources in any one product are typically limited
 - Often portable, battery operated
 - Intelligent: sophisticated and compelling
 - Easy to use, rich functionality
 - Connected
 - Extensible, serviceable, open
 - Support complex SW solutions

Windows CE OS Architecture



Microsoft
(binary)



OEM



IHV
ISV

Windows CE v3.0

- Priority based preemptive real-time kernel supporting processes and threads
 - Nested interrupts, 256 priority levels
- Win32 programming model & APIs
- Flexible graphical user interface
 - No display, graphics only, buttons, menus, controls, full windowing
 - Raster & TrueType font support, inking, handwriting recognition
- International support
 - Unicode based OS
 - Translations to 9 languages including Japanese

Windows CE v3.0

- Internet Connectivity
 - WinInet, HTTP, FTP, URLMON, proxy support
- IE for CE
 - HTTP1.1, HTML4.0, DHTML / DOM, J-script
 - Extensible with ActiveX controls
- pIE
 - smaller footprint
 - HTTP1.1, HTML3.2, J-script
- HTTP server, telnet server
- Desktop style shell
- pWord – word processing
- pInbox – email client

Windows CE 3.0 Add-on Pack

New Windows CE 3.0 OS Components

- Expanded and Enhanced Networking Capabilities
 - Internet Connection Sharing (ICS), PPTP Support, Remote Display Protocol 5.0, CAPI 2.0
- DirectX and Windows Media Technologies for Windows CE 3.0
 - DirectDraw and DirectSound APIs, DirectShow, Windows Media Technologies for ASF/ASX streaming, and Windows Media Player 6.4 Control
- XML v2.0 Support

Windows CE 3.0

Key Operating System Features

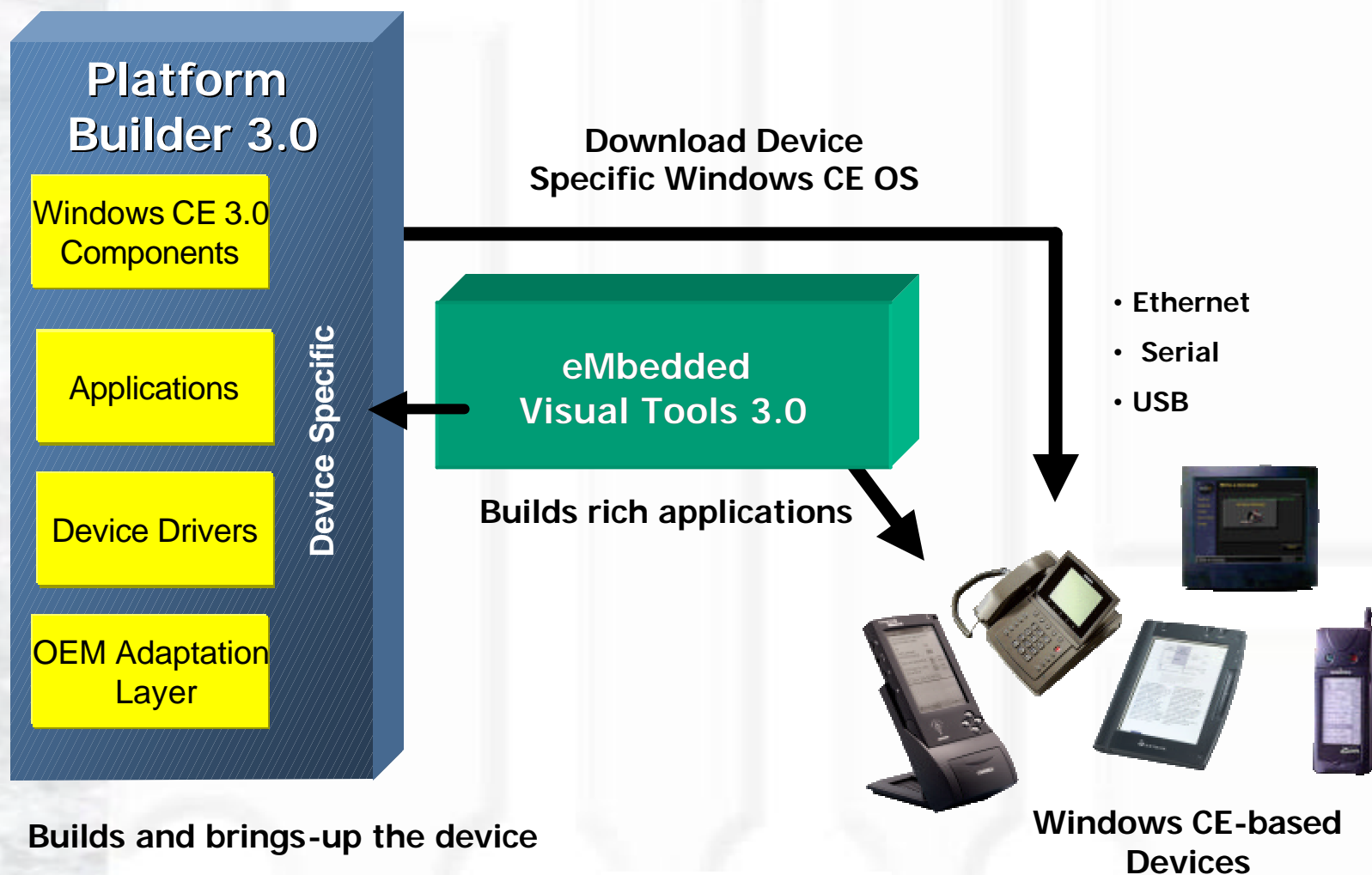
- ✍ Granular Modularity
 - Windows CE 3.0 is divided into 220+ extensible components
 - Lowers device costs by reducing memory footprint

Minimum Memory Footprint Requirements	
Kernel and file system	~ 400K
Kernel, file system, communications	~ 800K
Kernel, file system, communications, graphics, shell	~ 1.3M
Kernel, File System, communications, graphics, shell, and pocket word	~ 4M
Browser	~ +3M

- ✍ Built-in Internationalization Support
 - ✍ Unicode, localized into 10 Languages
 - ✍ Includes, Dutch, English, French, German, Italian, Japanese, Korean, Portugese (Brazilian), Spanish & Swedish

Windows CE 3.0

Building a Windows CE-based device



Windows CE Product Roadmap

Released

Released

Future



Version 3.0

- ✍ Real-time
- ✍ Modularity
- ✍ DCOM, ADO
- ✍ Manageability
- ✍ Device Bring Up



Add-On Pack

- ✍ Improved Networking
- ✍ Enhanced Multimedia

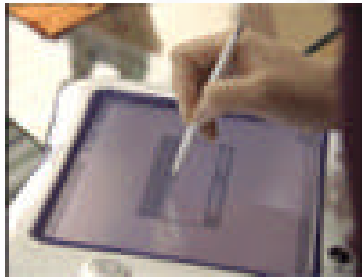


Future version

- ✍ Improved Wireless & Networking
- ✍ Latest Web Technologies
- ✍ Jumpstart Configurations
- ✍ Componentization
- ✍ Microsoft .net

Web Access Device

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Samsung
IZZI Web

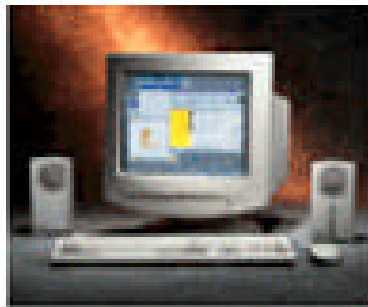
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Honeywell
WebPAD

Windows Based Terminal

Powered by Geode™



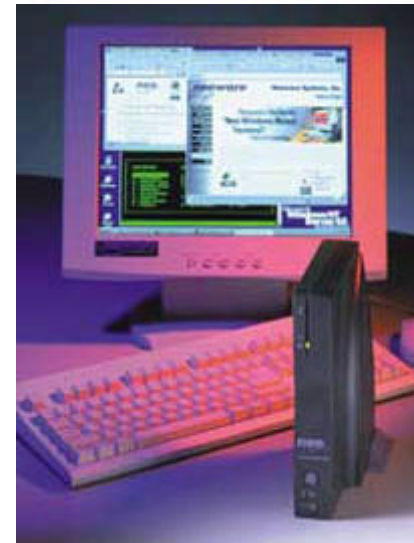
Powered by Geode™

Wyse

Powered by Geode™



Boundless



Neoware

Microsoft.NET

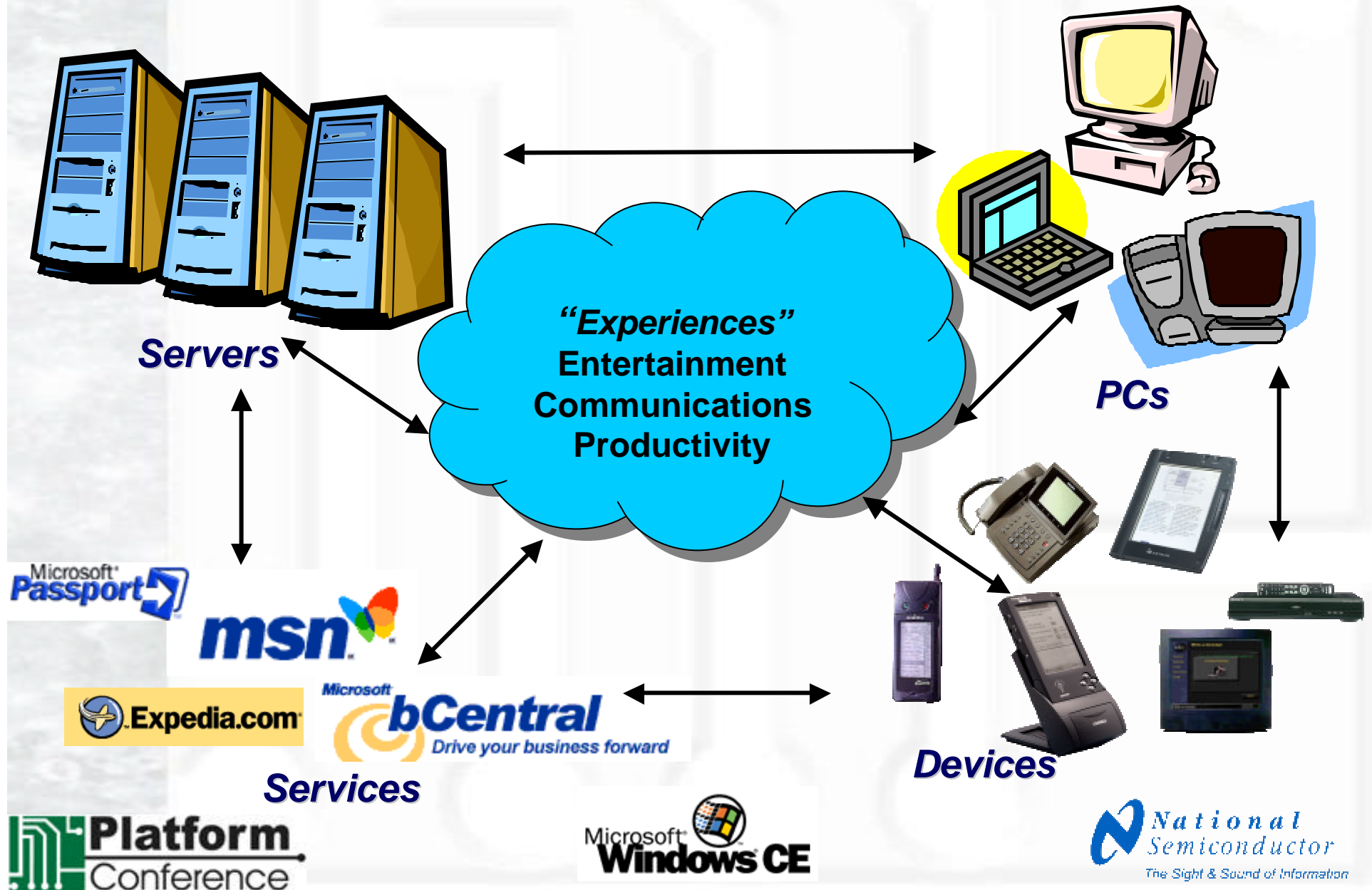


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Enabling the .NET Device Platform



The Value Chain

Source of Content/Data

- Internet/hosted applications
- Content
- Applications

Wireless Voice and Data Network

- Existing Voice/Data Networks
- Service providers
- Existing Platforms
- Network infrastructure

Devices

- Layer 1
- Software
- Applications

Development Platform

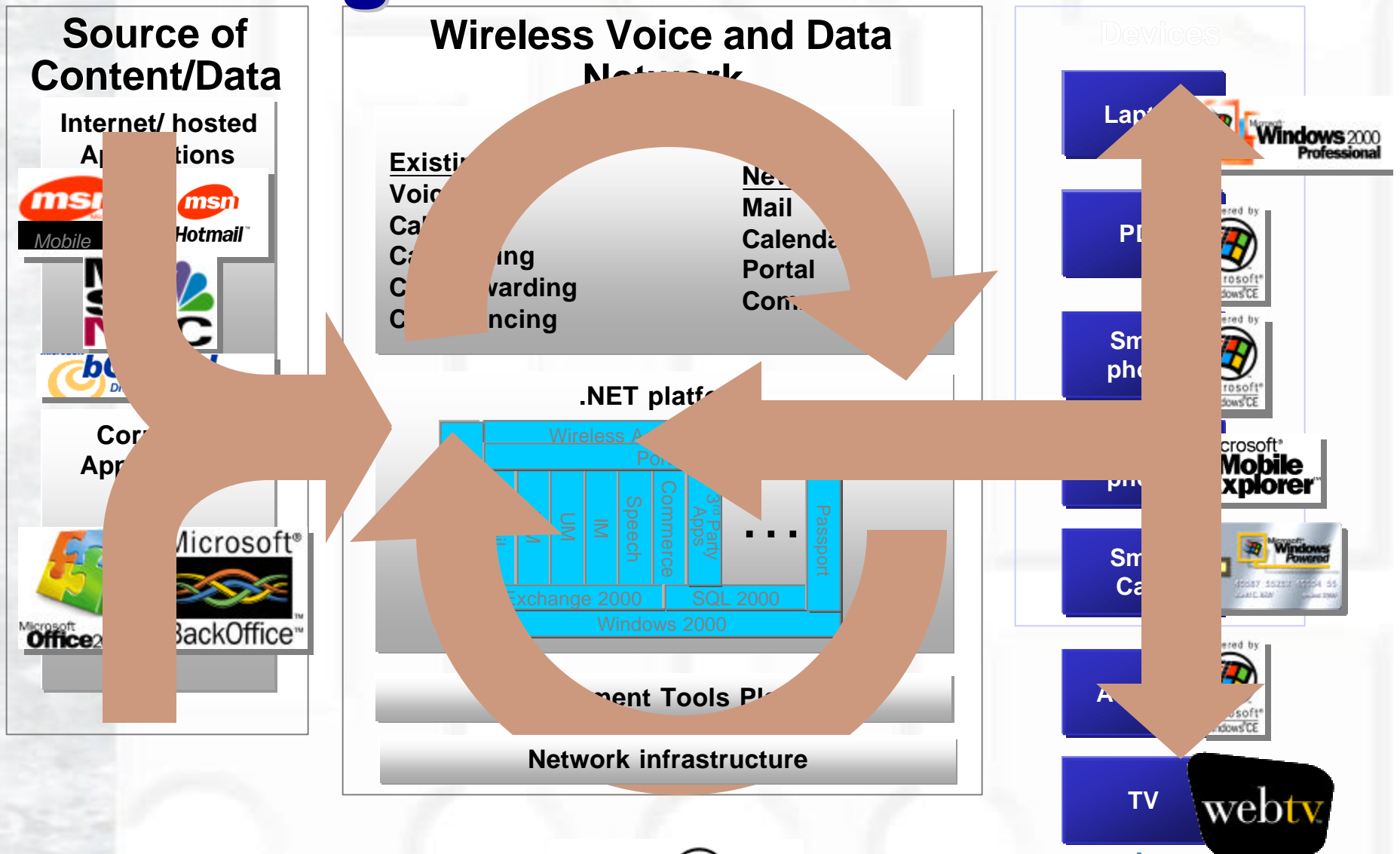
Large orange arrows indicate the flow of data and services between these components.

Platform Conference

Microsoft Windows CE

National Semiconductor
The Sight & Sound of Information

Creating Consumer Value



MSN Web Companion – Windows CE 2.12

Powered by Geode™

- The Best, Richest web experience
 - True IE4.01 SP2 on Windows CE2.12
 - Email (Hotmail)
 - MSN Instant Messenger
 - Embedded MSN contents & services
 - Windows Media Technology
 - Macromedia Flash



Compaq IA-2

Enhanced TV At A Glance

Internet on TV



Communication

Convenient access to the internet and family/friends

Interactive TV



Participation

Richer participation with TV programming

Personal TV

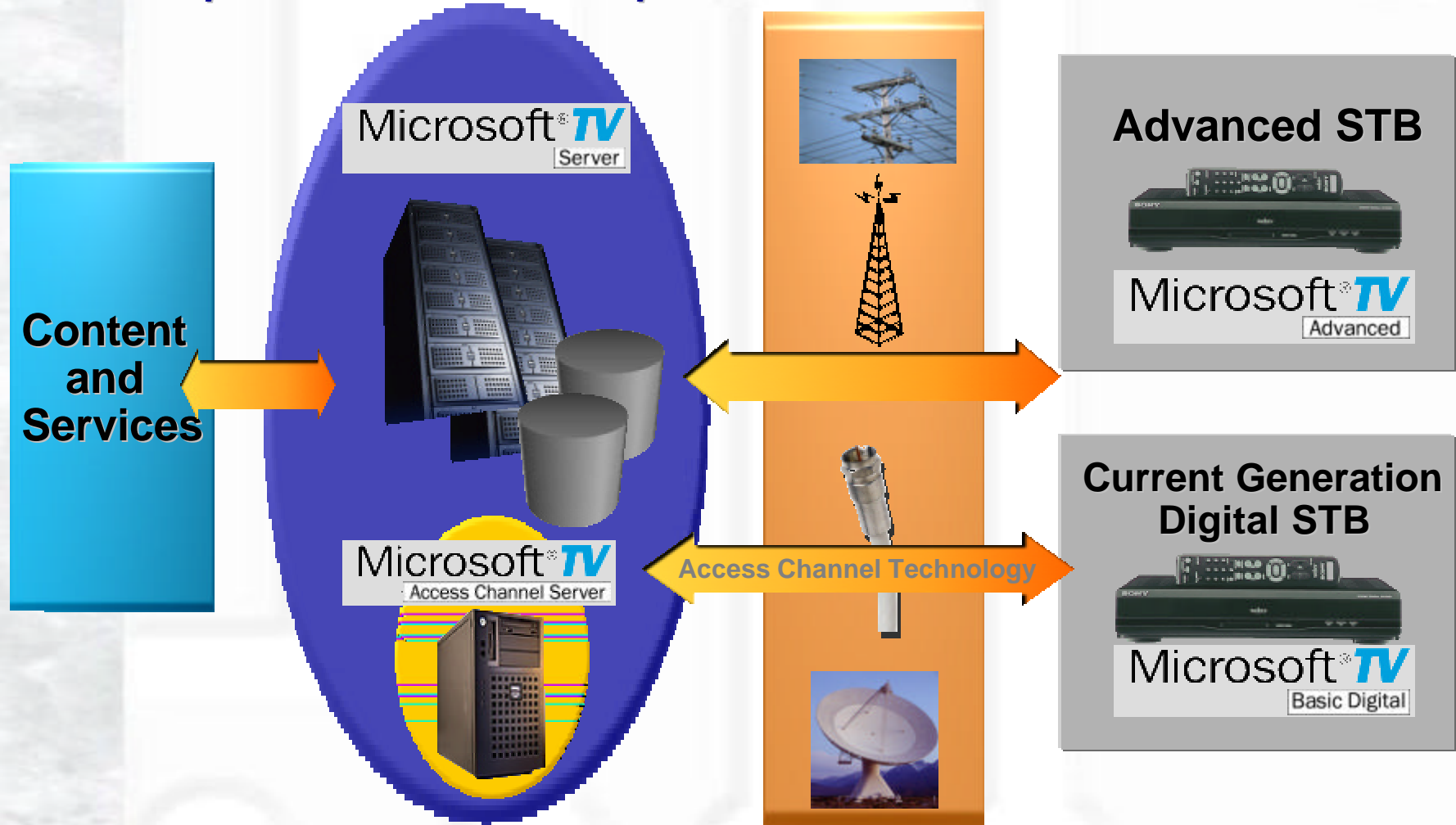


Choice/Control

Choice and control over when and what to watch

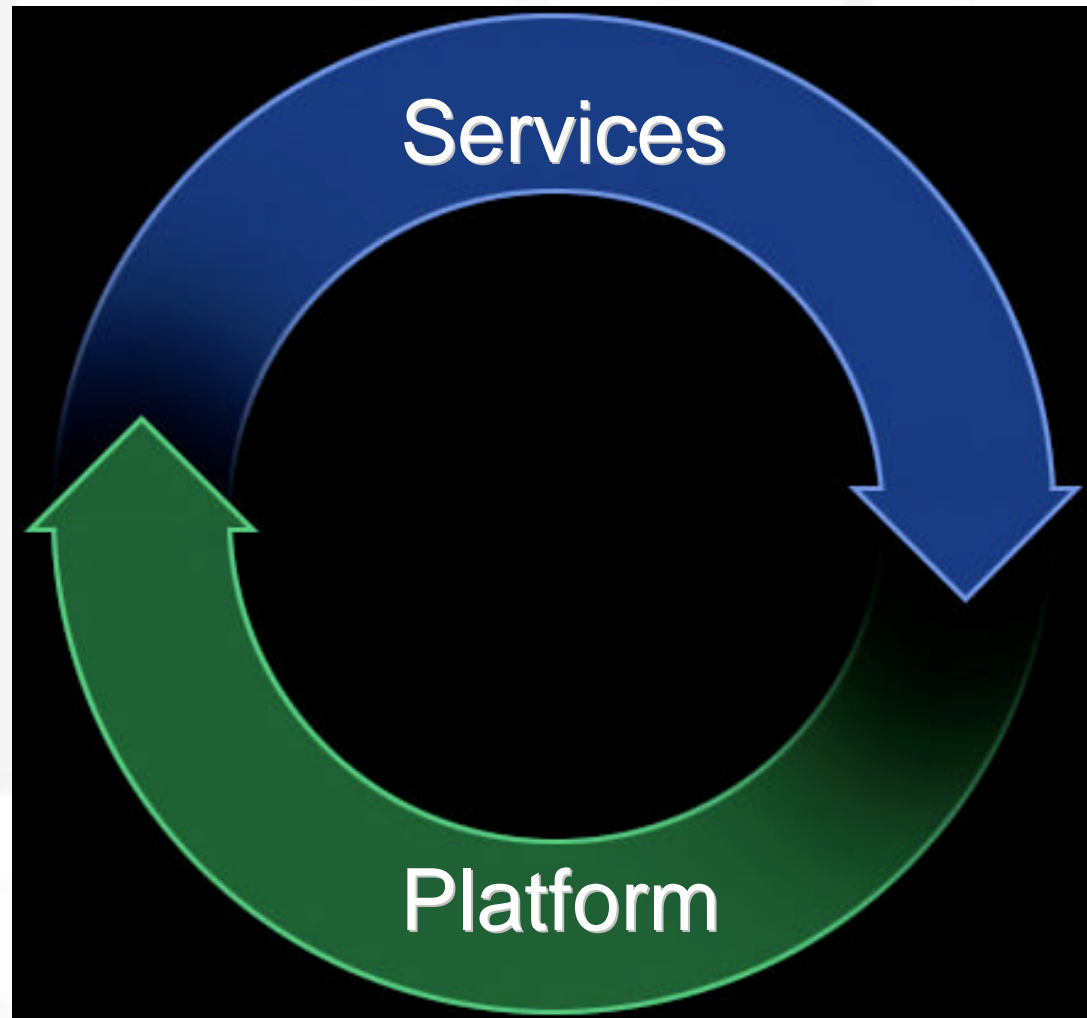
Microsoft TV Platform

Most comprehensive end-to-end platform for enhanced TV



Powerful Synergy

Drives mass
market
opportunity
for content
and services



Proves
customer
demand and
business
viability that
motivates
platform
adoption

Web Site Resource

- Windows CE :
<http://www.microsoft.com/windows/embedded>
- Mobile : <http://www.microsoft.com/mobile>
- MSTV : <http://www.microsoft.com/tv>
Automobile :
<http://www.microsoft.com/automotive>
- Windows Embedded Partner :
<http://www.mswep.com>

Where do you want to go today?®

Microsoft®